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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,554	07/23/2001	Lance E. Hacking	42390P12242	4419

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EXAMINER

KENDALL, CHUCK O

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/911,554

Applicant(s)

HACKING ET AL.

Examiner

Chuck Kendall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/20/2004 has been entered.
2. Claims 1 – 27 have been amended and are pending.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 12 and 9 – 13, 16, 19 – 21, & 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Lanning USPN 5,787,285.

Regarding claim 1, Lanning anticipates a method comprising: obtaining performance data on a first programs run on a first system of a first configuration system (see Fig. 3, PROFILE P1, 336, and associated text) and obtaining performance data on the first program run on a second system configuration of the first system (see Fig. 3, PROFILE P2, 337, and associated text, also see 8:63 – 67, see“ execute an application for the different profiles while monitoring the application’s runtime performance”), the performance data including a separate system profile for the

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program corresponding to the first and second system configurations, the performance data obtained from a tool (FIG, 4b 418); and

automatically sorting the performance for each profile to allow for comparison between profiles (see FIG, 4b 418, and 426 for compare).

Regarding claims 5 and 12, the method of claim 1 wherein obtaining performance data on a number of programs that run on a system comprises:

collecting data on multiple programs run on a system during a sampling period based on performance counters (Lanning see Fig 4b, 418 also see associated text 6: 55 – 60, for test and predetermined threshold) and transferring the data to a file (3:10).

Regarding claims 9 and 11, wherein automatically sorting and prioritizing the performance data for each profile to allow for comparison between profiles comprises:

dividing an address range of each program into a number bins and listing the performance data for each bin according to specified criteria (Lanning, see segments for bins (3:23-27), also see Lanning, 4:55-67, for criteria see P1 and P2).

Regarding claim 10, the method of claim 9 wherein the specified criteria is time – based (12: 30 - 35).

Regarding claim 13, the method of claim 1 further comprising displaying the sorted information on a display (4: 28 – 33, see provides data to external devices, including a display 222).

Regarding claim 16, Examiner is applying the same rationale to claim, which is the machine-readable version of the method claim as discussed in claim 1 above.

Regarding claim 19, Examiner is applying the same rationale to claim, which is the system version of the method claim as discussed in claim 1 above.

Regarding claim 20, the system of claim 19 further comprising a comparator to compare the profiles (Lanning, Col. 8 lines 65, to Col. 9 lines 10, see comparing profile information for different environments).

Regarding claim 21, Examiner is applying the same rationale to claim, which is the system version of the machine-readable storage medium as discussed in claim 13 above.

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Regarding claim 24, Examiner is applying the same rationale to claim, which is the system version of the method claim as discussed in claim 5 above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 – 4, 14,15,17,18,22, & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanning USPN 5,787,285 and further in view of Barritz et al. USPN 6,519,766.

Regarding claim 2, Lanning discloses all the claimed limitations as applied in claim 1 above. Although, Lanning doesn't expressly disclose obtaining performance data on a second system and the performance data including a separate profile for the program corresponding to the first and second system configurations, Lanning does suggest that his code could be used with many computer architectures or operating systems (9: 24 – 27). However, Barritz in an analogous art discloses that "one or more of the programs involved in the execution of all or part of a transaction may be running on multiple processors or multiple computers" and that the profiler can support this distributed environment (6: 5 – 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Barritz's limitations of analyzing the execution of a program on multiple processors, with Lanning because, it would make profiling more distributed.

Regarding claim 3, the method of claim 2 further comprising comparing the performance data of the first system with the second system (Lanning, Col. 8 lines 65, to Col. 9 lines 10, see comparing profile information for different environments).

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Regarding claim 4, Barritz further discloses the method of claim 3 further comprising:

obtaining additional performance data for both systems using the tool (Barritz, Col. 9 lines 24- 30).

automatically sorting the additional performance data of both systems (Barritz, Col. 9 lines 24- 30, see specific to event); and

comparing the additional performance data of the first system with the second system (Lanning, Col. 8 lines 65, to Col. 9 lines 10).

Regarding claim 14, the method of claim 1 wherein the performance data profiles include central processing unit (CPU) event measurements (Barritz, 42:10 -15).

Regarding claim 15, Barritz further discloses the method of claim 1, wherein the first system is a first processor and the second system is a second processor (Barritz, 6: 5 – 15).

Regarding claim 17, Examiner is applying the same rationale to claim, which is the machine-readable version of the method claim as discussed in claim 14 above.

Regarding claim 18, Examiner is applying the same rationale to claim, which is the machine-readable version of the method claim as discussed in claim 15 above.

Regarding claim 22, Examiner is applying the same rationale to claim, which is the system version of the machine-readable storage medium as discussed in claim 17 above.

Regarding claim 23, Examiner is applying the same rationale to claim, which is the system version of the machine-readable storage medium as discussed in claim 18 above.

6. Claims 6, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanning USPN 5,787,285 as applied in claims 5 and 24, in view of Adams USPN 5,465,258.

Regarding claim 6, Lanning discloses all the claimed limitations as applied in claim 5 above. Lanning doesn't explicitly disclose wherein one performance counter is clock ticks. However Adams does disclose this feature (Col. 5 line 67). Therefore, it

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would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lanning with Adams because, it would enable counting, "absolute time from start of execution" (Adams, Col. 5 line 60 - 67).

Regarding claim 25, Examiner is applying the same rationale to claim, which is the system version of the method claim as discussed in claim 6 above.

7. Claims 7, 8, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanning USPN 5,787,285 as applied in claim 5, and 24 in view of Dean et al. USPN 6,070,009.

Regarding claim 7, Lanning discloses all the claimed limitations as applied in claim 5 above. Lanning doesn't explicitly disclose wherein one performance counter is retired instructions. However Dean does disclose profile registers that can record many useful performance information such as cache misses and retired or aborted instructions (5:50 – 55), and states that " it is possible to estimate the total number of stall cycles...when one is given the fetch-to-retire latencies of sampled instructions...This is sufficient to identify bottlenecks" (Dean, 5: 60 – 65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lanning and Dean because, using identifying retired instruction during performance profiling enables the system to identify bottlenecks.

Regarding claim 8, Lanning discloses all the claimed limitations as applied in claim 5 above. Lanning doesn't explicitly disclose wherein one performance counter is cache misses. However Dean does disclose this feature (6:45-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lanning and Dean because, tracking cache misses helps to prevent stalling (Dean 4:20-35).

Regarding claim 26, Examiner is applying the same rationale to claim, which is the system version of the method claim as discussed in claim 7 above.

Regarding claim 27, Examiner is applying the same rationale to claim, which is the system version of the method claim as discussed in claim 8 above.

Response to Arguments

Applicant's argument's, see page 8 first paragraph of response, filed 09/20/2004, with respect to the rejection(s) of claim(s) 1-27 under 35 USC § 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Lanning (art of record) USPN 5,787,285 under 35 USC § 102.

Although Examiner applied Lanning in the previous rejection of Applicant's claim under 35 USC § 103, Lanning was applicable as prior art under 35 USC § 102, and Examiner is hereinafter applying Lanning prior art under 35 USC § 102.

And in response to Applicant's argument on page 9 of response, Lanning teaches "a first system of a first configuration system..." (See Fig. 3, PROFILE P1, 336, and associated text) and obtaining performance data on the first program run on a second system configuration of the first system (see Fig. 3, PROFILE P2, 337, and associated text, also see 8:63 – 67).

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-2723698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-2723695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CK.



TUAN DAM
SUPERVISORY PATENT EXAMINER